

MODEL-BASED FAULT DETECTION IN A MOTOR DRIVE

Abstract

A method for detecting an open winding in a motor. The method employs passive monitoring of the voltage, current and speed of the motor. A residue voltage is calculated that equals the difference between an idealized set of voltage drops across the motor load elements and the actual voltage drops. When the magnitude of the residue voltage equals or exceeds a threshold, an open winding condition may be declared and appropriate action may be taken.